

methyl chroman described by the English authors. As it is identical with the hydrogenated rottlerone and a diphenyl methane type is precluded by the molecular weight determinations, the nature of the reaction is still obscure. Our experiments in this connection are not complete but we are convinced that rottlerone is not a diphenyl methane as pictured by the English authors—the probability is that it is a flavanone. We are elucidating this point and our results will be published shortly.

J. N. RAY.  
K. S. NARANG.  
B. S. ROY.

University Chemical Laboratories,  
Lahore,  
March 20, 1940.

---

<sup>1</sup> *Jour. Chem. Soc.*, 1939, 1579.

### A National Research Council for India

THE proposal to inaugurate a National Research Council is one which should be examined very carefully from every point of view. Hitherto, most of the people who have given expression to their views on this subject have had before them the example of the Department of Scientific and Industrial Research in Great Britain. They have consequently pictured the proposed National Research Council somewhat on the lines of this Department. It should, however, be remembered that besides Great Britain other advanced countries also have Departments or Councils which control, finance, promote or co-ordinate scientific and industrial research. Since we are in the position of late-comers in this field and wish to establish a Council now, it is highly desirable that we should take advantage of the experience gained and the lessons learnt by others. I, therefore, think that we should in the first place appoint a small Committee to collect all available information on the subject of industrial research departments or councils from other countries including Great Britain and prepare a small pamphlet showing the constitution of such de-

partments or councils, the principles governing their work and the means by which they attain their objectives in practice.

Whatever may be the future constitution of the proposed Research Council there are some general principles which will have to be considered in this respect. There is, for example, the question of the personnel. In my opinion, it is highly desirable that the majority of the members of such a Council should be scientists and technical experts. They alone can fully appreciate the significance and the relative importance of the scientific investigations, and though they will naturally enlist the help of the laymen so far as routine matters are concerned, the direct control and regulation of the affairs of the Council should be in their hands.

It is presumed that the Council, when constituted, will have funds of its own to devote to the promotion and encouragement of scientific research. In fact, without large funds at its disposal—if the Council is merely expected to work in an advisory capacity—it cannot fully discharge its functions in a satisfactory manner. If the Council is given necessary funds to cater for the scientific needs of the country, it will be very desirable to evolve some kind of machinery to ensure that these funds are utilised properly and to the best advantage. If those, who have the grant of funds in their power, are also expected to submit schemes for scientific and industrial researches, the tendency might develop for a man or a group of men to support another in the hope of a similar compliment. It would, therefore, be necessary to ensure that the examination of the merits of schemes of scientific research and the granting of funds for their prosecution are generally in the hands of completely disinterested and utterly impartial men who are also qualified to apply their minds to these subjects.

One of the main functions of such a Council would be the co-ordination of scientific work in the country. Of late, the term 'co-ordination' has been very frequently used without, I am afraid, a clear understanding of its implications in many cases. While co-ordination on a broad

scale is essential for the prevention of duplication of work and consequent wastage of time and labour, it must not be allowed to assume such a form as to permit undue interference with or strangulation of scientific work. In a country of the size of India, with its numerous complex problems awaiting to be solved, it is sometimes not only inevitable but necessary that more than one person should be engaged on more or less similar work. In such cases co-ordination must be interpreted in a liberal and not in a stringent sense, as otherwise it may have a tendency to place undue power in the hands of those who happen to be associated with the work of the Council.

NAZIR AHMAD.

Indian Central Cotton Committee,  
Bombay,  
February 27, 1940.

I ENTIRELY agree to the proposal for instituting a Central National Research Council which should explore and adopt means for organising and developing all the industrial researches in our country, and which at the same time should work in co-operation with and be *the co-ordinating agent* for all the existing industrial research departments in India. Needless to say, it is with the fullest of co-operation that the thing could work most successfully.

B. K. DAS.

Osmania University, Hyderabad (Dn.),  
Zoology Department,  
February 25, 1940.

THE country certainly needs a central co-ordinating agency for guiding industrial research, if there is to be no set-back to the hard-won industrial progress of the last two decades. This need is nowhere felt greater than in the mineral industries, where the raw produce of the mines, the ores and industrially vital minerals have been allowed to leave the country in ever-increasing tonnages simply because of lack of technical guidance in the processes of dressing, refining and manufacture of raw minerals for fitting them to the needs of commerce and industry. Whether the proposed

research organisation functions independently or as a Government department or on lines analogous to the Mellon Institute of the U.S.A., it should not lose its character, mainly as a national advisory council for planning and directing industrial research.

D. N. WADIA.

Department of Mineralogy,  
Torrington Square,  
Colombo,  
March 5, 1940.

IN response to the Editor's request for a short note on the above subject I would draw attention to the following aspects of the question:

(a) What has happened to the Reports and Recommendations of the Holland Industrial Commission which was so active during the Great War and from which so much was anticipated?

(b) Could not more be done to advertise the bulletins at present being published under Government authority? Thus the excellent *Bibliography of Industrial Publications*, Bulletin No. 1 of the Industrial Research Bureau, does not seem to be widely known. Local publishing agents do not apparently keep any serious stock of Government publications and consequently some time and trouble is necessary to procure them from Simla if they are even then available.

(c) Effort should be made to co-ordinate large-scale and cottage industries on the lines developed by Henry Ford in connection with his motor industry. With the extension of electrical power transmission to the villages this should not be too difficult of accomplishment.

(d) Before starting new industries those at present in operation should be, if possible, improved and perfected.

(e) It should be particularly realized that the driving power behind industrial development nearly always depends on the availability of men of outstanding force and special aptitude. Such men should be carefully sought for among the younger generation. It may be sadly recorded that India has suffered a great loss in this respect from the premature passing of J. A. D. Naoroji.

(f) Finally, the present Industrial Research Council with its co-ordinated practical expression in the Industrial Research Bureau may well serve as a nucleus for the larger body which is the subject of the present discussion.

GILBERT J. FOWLER.

Madras,  
March 1, 1940.

THE proposed Council should consist of experts representing all phases of industrial manufacture in India, who should be well-informed of world progress in their respective branches and capable of advising on the value of projected developments. They would work under an unbiassed chairman of experienced organising ability.

The Council should be so expert as to be able to guide the exploitation of both the natural resources and the capital of India in the desired directions. It should determine the deficiency and surplus of commodities in the present and future needs of India, demonstrate methods and processes found of value in other countries and pursue new ideas so as to attract private and public capital and enterprise, and generally promote research into manufacture. It should set up bureaux of trade and scientific information and advice, an institution to standardize methods and materials, laboratories for industrial chemistry and physics and engineering, and send *liaison* officers abroad to inform on the disposal of India's exports. A free hand should be given to guide and rationalise industrial research already in progress. The immediate problem is economic—to find out major defects in India's self-sufficiency and to promote these industries.

W. L. DAVIES.

New Delhi,  
March 5, 1940.

A NUMBER of industries have their problems solved in science institutions, by making extra provision in their original equipment. This would be economical to the industries which cannot maintain special laboratories of their own.

There should be provision in existing libraries for classified literature, edited in a suitable form, to help existing and new industrial concerns. Industries may be called upon to make contributions in this direction.

A complete register should be maintained of industrially useful scientific researchers with topics that they can handle so far as information and facilities are available. The actual problems of different industries should also be registered and arrangements made for their solution.

Accurate information regarding raw materials, processing, testing and marketing could be given through the establishment of standardizing and testing laboratories. These will be necessary to numerous smaller industrial concerns that cannot be expected to maintain special testing and expensive appliances.

G. R. PARANJPE.

Royal Institute of Science,  
Bombay,  
March 6, 1940.

IN proportion to the size and resources of India there are not yet adequate facilities for scientific research, especially in connection with industrial research. Attempts are being made to utilise the resources of the Indian Institute of Science to further this cause and one can but hope that these efforts will succeed. The Universities in India are doing more and more scientific work. It would be surely desirable to have a definite plan of scientific research and this can best be done by an all-India body like the National Research Council. In this venture it is necessary to gain the good-will of industrialists who should be prepared to take advantage of opportunities for scientific research. An army of scientists working in every industrial concern would tend to improve the quality of work, while it would harness the scientific genius and talent in our country.

A. R. WADIA.

Maharaja's College,  
Mysore,  
March 11, 1940.